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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
060091.00238

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Name _____

Application Number:

10/689,350

Filed: October 22, 2003

First Named Inventor:

Ari HOTTINEN

Art Unit: 2611

Examiner: Kevin Kim

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ Applicant/Inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96)

☒ Attorney or agent of record.
Registration No. 58,823

☐ Attorney or agent acting under 37 CFR 1.34.
Registration Number if acting under 37 CFR 1.34 _____

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Date

NOTE: Signatures of all of the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: Confirmation No.: 4223

Ari HOTTINEN Art Unit: 2611

Application No.: 10/689,850 Examiner: Kevin Kim

Filed: October 22, 2003 Attorney Dkt. No.: 060091.00238

For: METHOD AND CONTROLLER FOR CONTROLLING COMMUNICATION RESOURCES

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

January 30, 2009

Sir:

In accordance with the Pre-Appeal Brief Conference Pilot Program guidelines set forth in the July 12, 2005 Official Gazette Notice, Applicant hereby submits this Pre-Appeal Brief Request for Review of the final rejections of claims 1-4, 6-19, 21-34 and 36-51 dated September 30, 2008. Applicant filed a Response to the Final Office Action on December 30, 2008, and the Office issued an Advisory Action dated January 21, 2009 maintaining the final rejections of claims 1-4, 6-19, 21-34 and 36-51. Applicant hereby appeals these rejections and submit this Pre-Appeal Brief Request for Review because the rejection contains clear errors.

Claims 1-4, 6-19, 21-34 and 36-51 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ketchum et al. (U.S. Patent No. 6,138,026) in view of Kuchi (U.S. Patent Publication No. 2002/0126648). The Office Action took the position that Ketchum discloses all of the claim recitations except for a communication channel that uses a non-orthogonal modulation matrix. The Office Action then relied on Kuchi to cure those deficiencies of Kethcum with respect to the claims. This rejection contains clear errors and must be withdrawn.

Ketchum and Kuchi do not disclose or suggest "determining a performance measure...**the performance measure being sensitive to the modulation**...and controlling the communication resources based on the performance measure", as recited, in part, in independent claim 1, and similarly in independent claims 16, 31, 46, 50 and 51 (emphasis added). The Office Action admitted that Ketchum does not disclose all of the above-noted features of the claims. However, Applicant disagrees that Kuchi cures those deficiencies of Ketchum with respect to the subject matter recited in the claims.

The Office Action alleged that page 15, paragraph [0171] of Ketchum discloses "the performance measure being sensitive to the modulation", as recited in the claims. Applicant disagrees and submit that Ketchum discloses transmission of channel state information (CSI) from the receiver back to the transmitter. paragraph [0171] discloses modulation of the CSI but not dependency, i.e. sensitivity, of the CSI to the modulation. In other words, paragraph [0171] simply discloses a conversion of the CSI into modulation symbols, and does not disclose that the modulation affects the values of the CSI (emphasis added). To the contrary, Ketchum discloses

an example where the modulation is definitely sensitive to the CSI in the sense that the actual symbol values modulated would depend on the values of the CSI.

If the CSI parameters disclosed in Ketchum were interpreted as being sensitive to the modulation simply because the signal received was modulated for transmission from the receiver to the transmitter, then the word "sensitive" is not being interpreted correctly by the Office Action and the claim is not being read and interpreted as a whole. Claim 1 recites that the performance measure is "sensitive to the modulation" which refers to the non-orthogonal modulation used to determine the performance measure. Accordingly, the modulation in the context of the claim recitations refers to the modulation included in the communication channel model from which the performance measure is determined. In order to disclose that the CSI includes "sensitivity" to the modulation, the CSI should be sensitive to the modulation used by the transmitter (not the receiver disclosed in paragraph [0026] of Ketchum), and Ketchum is silent regarding the CSI being sensitive to the modulation used by the transmitter.

Ketchum does not disclose any modulation being used that would affect a performance measure, such as, the bit error rate (BER) or the CSI. At best, Ketchum would modulate a signal simply for transmission between systems 310 and 350 (see FIG. 3 of Ketchum). Ketchum does not disclose a "performance metric" (i.e., bit error rate) used to perform the resource allocation (i.e., selection of the modulation and coding scheme). Claim 1, for example, recites "determining a performance measure...the performance measure being sensitive to the modulation...and controlling the communication resources based on the performance measure." In other words, Ketchum does not disclose a "performance metric", such as, BER, as the performance measure for use in the resource allocation.

The Office Action alleged that the CSI parameters are comparable to the "performance metric" recited in the pending claims (see page 2, line 10 of the Final Office Action dated September 30, 2008). Applicant submits that the example CSI parameters disclosed in Ketchum include signal-to-noise ratio (SNR), power control information, various signal-to-interference-plus-noise ratios (SINRs), a data rate indicator selected on the basis of the SNR, and a channel gain. None of these examples of "CSI" parameters would be affected by the modulation used to modulate a signal for transmission. **The CSI disclosed in Ketchum stays the same regardless of the modulation used.**

Referring to the examples of CSI, for example, SNR is simply a signal measured against the amount of noise in the background, such as, additive white Gaussian noise (AWGN) a.k.a. "noise." Power control and power levels of a signal are not considered in light of the type of modulation, as the amplitude of the signal may be modified by increases or decreases to the power regardless of the modulation used. A data rate indicator is simply control data itself that is used to indicate information used to represent the data type. Lastly, channel gain is a parameter used to indicate the amount of gain measure in the channel as a whole so that the operating conditions of the channel are recognized by the transmitter and receiver pair.

As noted above, the various examples of CSI parameters all operate independently without any affect from the modulation used to propagate the transmitted signal. Regardless of the modulation used for signal transmissions disclosed in Ketchum, the modulation is performed on the signal transmissions independently of the measured CSI parameters. Furthermore, in Ketchum the modulation is removed via demodulation prior to measurements being performed on the signal and is again modulated **after** the CSI parameters are measured (see paragraph

[0171] of Ketchum and modulator/demodulator pairs 322a, 322t...352a and 352t of FIG. 3) (emphasis added). Certainly, the demodulation and modulation being performed prior to and/or after the CSI parameters are measured is a clear indication that the CSI parameters are measured without regard or "sensitivity" to the modulation used. Relying on Ketchum to disclose "determining a performance measure...being sensitive to the modulation...and controlling the communication resources based on the performance measure", constitutes clear error.

In addition to the above-noted deficiencies of Ketchum, Kuchi further fails to cure the deficiencies of Ketchum with respect to the pending claims. Kuchi discloses using a transmit diversity system that includes a base station 104 and a receiver 108 (see FIG. 1 of Kuchi). A stream of complex symbols is allocated to the transmitting device, which includes signal replications, such as, a complex conjugate and a negative complex conjugate of the signal symbols. A parallel transmission is temporally divided into time symbol periods. The transmitting devices of the transmit diversity system may transmit the complex symbol signals in parallel.

Kuchi further discloses using a non-orthogonal modulation with a non-orthogonal modulation matrix to perform the transmissions, however, Kuchi fails to disclose or suggest "determining a performance measure...the performance measure being sensitive to the modulation...and controlling the communication resources based on the performance measure", as recited, in part, in independent claim 1 and similarly in independent claims 16, 31, 46, 50 and 51.

Accordingly, Kuchi does not disclose or suggest the above-noted feature of the performance measure being sensitive to the modulation. Furthermore, even if Kuchi were combined was combined with Ketchum, the combination would not yield the claimed invention, because none of the references provide any disclosure or suggestion that the transmission modulation could be determined by the performance of the modulation in that channel. Kuchi only discloses a non-orthogonal modulation by a non-orthogonal modulation matrix, and provides no disclosure for the dependence of the performance measure of the communication channel being sensitive to the modulation.

In the disclosure of the present application, the feature of the performance measure being sensitive to the modulation is described on paragraph [0088] of the specification. Accordingly, Ketchum and Kuchi do not take into account the effect of the modulation when evaluating the performance of the communication channel. Ketchum simply defines the state of the channel and selects a preset transmission scheme for the channel. The present disclosure enables direct comparison of different transmission modulation methods in the communication channel, and provides more accurate selection of an optimal transmission modulation for the current communication channel.

Therefore, Applicant submits that the combination of Ketchum and Kuchi fails to teach or suggest all of the subject matter of independent claims 1, 16, 31, 46, 50 and 51. By virtue of dependency, Ketchum and Kuchi also fail to teach the subject matter of those claims dependent thereon. The rejection of claims 1-4, 6-19, 21-34 and 36-51 constitutes clear error and must be withdrawn.

Claims 3, 18 and 33 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ketchum in view of Kuchi and further in view of Cheng et al. (U.S. Patent No. 6,411,817). This rejection constitutes clear error and must be withdrawn.

Ketchum and Kuchi are discussed above. Cheng discloses a method for controlling downlink power in a time-division multiplex wireless system. The method may provide different downlink transmit signal powers to different time-division multiplex channels of a single carrier. A base station receives a measured signal parameter data for a downlink transmit signal of a time-division multiplex channel.

Claims 3, 18 and 44 are dependent upon claims 1, 16 and 31, respectively, and contain all of the limitations thereof. As discussed above, Ketchum and Kuchi fail to disclose or suggest all of the elements of claims 1, 16 and 31. In addition, Cheng fails to cure the deficiencies in Ketchum and Kuchi as Cheng also fails to disclose or suggest "determining a performance measure...the performance measure being sensitive to the modulation...and controlling the communication resources based on the performance measure", as recited, in part, in independent claim 1, and similarly in independent claims 16, 31 and 46." Thus, the combination of Ketchum and Kuchi and Cheng fails to disclose or suggest all of the elements of claim 3, 18 and 44. Furthermore, claim 3, 18 and 44 should be allowed for at least their dependence upon claims 1, 16 and 31 and for the specific limitations recited therein.

For at least the reasons discussed above, Applicant respectfully submits that the cited references fail to disclose or suggest all of the elements of the claimed invention, and, thus, the rejections constitute clear error and must be withdrawn. Each of claims 1-4, 6-19, 21-34 and 36-51 should be allowed, and this application passed to issue.

Reconsideration and withdrawal of the rejections, in view of the clear errors in the Office Action, is respectfully requested. In the event this paper is not being timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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